Ch 12, 13, 14 Test Study Guide AE Chem

What is a mixture, what are the three types of mixtures, and how do you distinguish between them?

Define

Solubility-

Solvent-

Solute-

Saturated-

Unsaturated-

Supersaturated-

Use the solubility curve on page 46 (or the handout I gave you) to answer the following questions:

1. What is the solubility of potassium nitrate in 100 grams of water at 80°C ? _____

2. What is the solubility of sodium chloride in 100 grams of water at 90°C ? _____

3. What is the minimum temperature needed to dissolve 35 grams of potassium chloride in 100 grams of water? _____

4. If 250 grams of potassium nitrate are mixed with 100 grams of water at 85°C, how much will *not* dissolve?_____

5. How much potassium nitrate will dissolve in *50 grams of water* at 95°C? _____

6. An amount of 100 grams of water at 90°C are saturated with potassium chloride. If this solution is cooled to 35°C, how much of the solid will precipitate? _____

7. How much water is needed to dissolve 15 g of KNO_3 at 40°C?

How does solubility differ between gases and solids according to temperature?

How does pressure on a gas affect solubility of that gas? Give an example.

How do you increase the rate of dissolving of solutes?

What takes place when a solute dissolves?

Calculate the following molar concentrations:

12 grams of $MgCl_2$ in 240 mL of solution

98 grams of KOH in 2.2 liters of solution

How many grams of each solute do you need to make the following aqueous solutions?

0.450 L of 2.0 M NaOH

150 mL of 2.0 M $LiNO_3$

Draw sketches of phase diagrams of water and other substances below. Make sure to label the axes and where solids, liquids, and gases exist on the graph.

Define critical point and triple point. Where are they on a phase diagram?

How does adding solute to a solution affect boiling point and freezing point? Why?